

## ABSTRACT

An electrically powered bicycle includes a hub motor, which is mounted to the bicycle frame by its axle. A drive sprocket mounted to the outer case of the motor is engaged by a chain to the sprocket on a multi-speed hub on the rear wheel, so that when the motor turns, it drives the wheel. A freewheel, also mounted to the outer case of motor, is engaged by a chain to the large sprocket on the pedal crank, such that when the motor is driving the bicycle, it does not turn the pedals. When the motor is not operating the pedals can turn the outer case of motor and consequently the rear wheel. Turning the motor with the pedals causes very little or no extra drag because bicycle hub motors freewheel in the forward direction. When the pedals and the motor are both operating and the sprocket on the freewheel is rotated as fast as the motor, both the pedals and the motor can drive, the bicycle in unison.